

Shell Chemical employs a six-step method that purifies benzene to 99.9%. The first five steps are similar to Netzer's patent, except that they produce benzene that is only 50 to 70% pure. In the final step, Shell extracts benzene that is 99.9% pure. This last extraction step had been patented by Shell as the Sulfolane method. Extraction separates the components of the

mixture based on solubilities. Unlike Netzer, Shell says that fractionating does not encompass extraction and that fractionating specifically means separating a mixture by its components' boiling points.

Netzer sued Shell Chemical LP, Shell Oil Company, and Shell Oil Products Company LLC.

3. *No Literal Infringement.*

Literal infringement of a method claim means that the infringer performed every step of the method.¹ A critical step in Shell's method is extraction because this step increases the benzene yield from 50-70% to 99.9%. Netzer's method does not include extraction and does not yield benzene of 99.9% purity. To infringe, Shell would have to eliminate the extraction step and still produce benzene purified to at least 80%. There is no literal infringement.

4. *No Equivalence.*

Netzer is barred from claiming infringement under the doctrine of equivalents by specific exclusion, prosecution-history estoppel, and prior art.

Traditionally, high-purity benzene was required to produce ethylbenzene, a precursor to plastics. Recent technology has made it possible to create ethylbenzene from low-purity benzene, which is cheaper. In its patent, Netzer expressly excludes a method that produces benzene of 99.9% purity. The specification says that his purpose is to take advantage of the recent demand for cheaper, lower-purity benzene. He names Shell's patented Sulfolane method as one of the conventional, more expensive methods, that his patent avoids. No claims mention benzene higher than 97%. The summary of the invention suggests an ideal method that produces benzene that is 98% pure.

Netzer's claim is also barred by prosecution-history estoppel.² In response to the United States Patent and Trademark Office, Netzer explicitly said that the '496 patent is useful for producing benzene that does not need to exceed a purity of 99 percent by weight.

¹ Joy Technologies, Inc. v. Flakt, Inc., 6 F.3d 770, 775 (Fed. Cir. 1993).

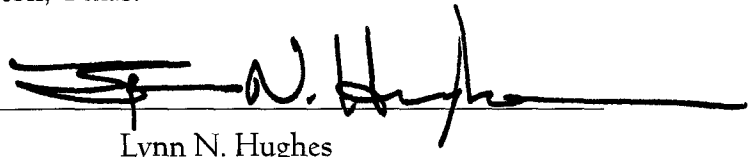
² Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd., 535 U.S. 722, 733-34 (U.S. 2002).

Finally, Netzer's claim is barred by prior art. The '857 patent by Tokuhsa is a method for producing benzene that is higher than 99.5%. To overcome a prior-art rejection during prosecution, Netzer distinguished the '496 patent by saying that he was not concerned with the high-purity levels of the '857 patent. If Netzer's patent had claimed benzene that was 99.9% pure, it would have been invalidated by the '857 patent. Matter that would have invalidated the patent is necessarily excluded from the patent's scope.³

5. *Conclusion.*

In this suit, Netzer is trying to expand its patent's coverage of methods and yields, despite having disclaimed the product and been barred from claiming the method. Infringement of a method patent means that the infringer performs every single step of the method and yields the same product. Shell's method performs the methods in Netzer's patent, but adds a distinct step that yields a nearly pure product. Netzer will take nothing.

Signed on August 26, 2015, at Houston, Texas.


Lynn N. Hughes
United States District Judge

³ Wilson Sporting Goods Co. v. David Geoffrey & Associates, 904 F.2d 677, 684 (Fed. Cir. 1990).